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Erratum: $\gamma^*\gamma^*$ cross section at NLO and properties of the BFKL evolution at higher orders

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Erratum to: JHEP05(2014)099

Abstract: This is the erratum to [1]. Equation and figure numbers below refer to those in the original paper unless explicitly specified otherwise.

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1 Corrections to equations

- Right-hand side of equation (3.7) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^2}$.
- In equation (3.10), the factor of $\frac{1}{128}$ has to be replaced by $\frac{1}{64}$.
- Right-hand side of equation (3.12) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^4}$.
- Right-hand side of equation (3.15) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^4}$.
- Right-hand side of equation (3.16) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^4}$.
- In equation (3.17), the factor of $\frac{1}{128}$ has to be replaced by $\frac{1}{64}$.
- In equation (3.21), the overall factor of 2 has to be replaced by $\frac{1}{8}$ and the overall factor of π^4 has to be removed.
- In equation (3.23), the overall factor of $32s\pi^6$ has to be replaced by $2s\pi^2$.
- In equation (3.24), Re has to be replaced by Im.
- In equation (3.25), the overall factor of $32\pi^6$ has to be replaced by $2\pi^2\left(\sum_f e_f^2\right)^2$.
- Right-hand side of equation (3.26) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^4}$.
- Right-hand side of equation (3.31) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^2}$.
- In equation (3.38), the overall factor of $2\pi^2$ has to be replaced by $\frac{1}{2}$.
- In equation (3.39), the overall factor of $32\pi^6$ has to be replaced by $2\pi^2$.
- In equation (3.40), the overall factor of $32\pi^6$ has to be replaced by $2\pi^2\left(\sum_f e_f^2\right)^2$.
- In equation (3.41), the overall factor of $32\pi^6$ has to be replaced by $2\pi^2\left(\sum_f e_f^2\right)^2$.
- Right-hand side of equation (B.11) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^2}$.
- Right-hand side of equation (B.12) has to be multiplied by an overall factor of $\frac{1}{(2\pi)^4}$.
- In equation (B.13), the overall factor of $32s\pi^6$ has to be replaced by $2s\pi^2$.
- In equation (B.14), the overall factor of $32s\pi^6$ has to be replaced by $2s\pi^2$.
- In equation (B.15), the overall factor of $32s\pi^6$ has to be replaced by $2s\pi^2$.

2 Figures

- Figure 3 in the original text has to be replaced by figure 1 from this erratum.
- Figure 4 in the original text has to be replaced by figure 2 from this erratum.

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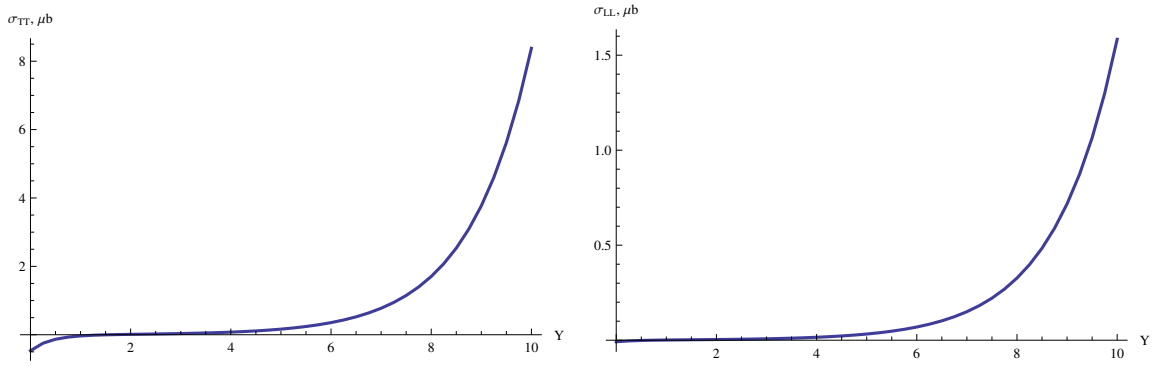

Figure 1. NLO $\gamma^*\gamma^*$ cross section with $Q_1 = Q_2 = 1\,\text{GeV}$ plotted as a function of rapidity Y. Virtual photons have transverse polarizations in the left panel and longitudinal polarizations in the right panel.

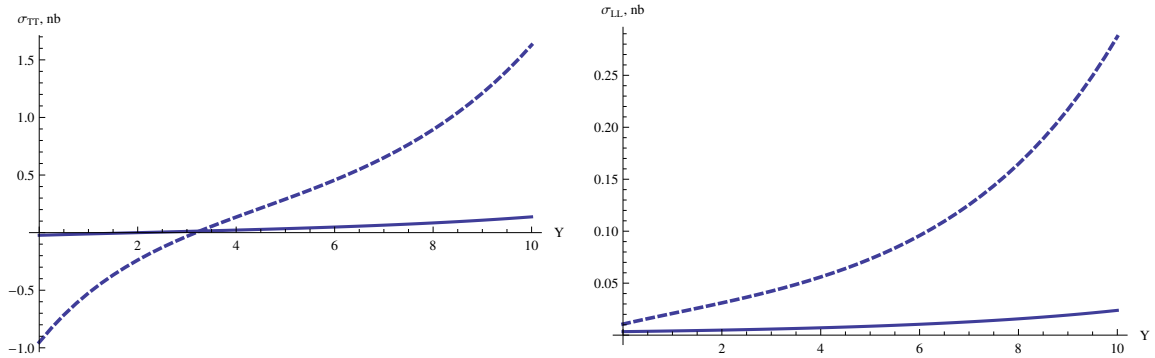

Figure 2. NLO $\gamma^*\gamma^*$ cross section with $Q_1 = Q_2 = 5\,\text{GeV}$ (dashed line) and $Q_1 = Q_2 = 10\,\text{GeV}$ (solid line) plotted as functions of rapidity Y. Again the virtual photons have transverse polarizations in the left panel and longitudinal polarizations in the right panel.

3 Correction to text

- The first three lines right after equation (3.3) have to be replaced by:

  In the following calculation we omit the factor $\left(\sum_f e_f^2\right)^2$ (where e_f labels the electromagnetic charge of the quark with flavor f), which we will reinstate in the expressions for the cross sections.

References

[1] G.A. Chirilli and Y.V. Kovchegov, $\gamma^*\gamma^*$ *Cross Section at NLO and Properties of the BFKL Evolution at Higher Orders*, *JHEP* **05** (2014) 099 [arXiv:1403.3384] [INSPIRE].

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